

Attorney Docket No.: 01CON263P-CIP
Application Serial No.: 10/061,171

REMARKS

In the Office Action of November 14, 2005, the Examiner has rejected claims 1-25. By the present amendment, applicant has amended claims 6, 12, 18 and 24. After the present amendment, claims 1-25 remain pending in the present application. Reconsideration and allowance of outstanding claims 1-25 in view of the above amendments and following remarks are requested.

A. Objection to the Drawings

The Examiner has objected to the drawings stating that the drawings “must show every feature of the invention specified in the claims” and “the receiver, a processor and a transmitter recited in claims 14 and 20 must be shown or the feature(s) canceled from the claims.”

Applicant respectfully submits that the objection to the drawings for not showing every feature of the invention specified in the claims should be withdrawn for the following reasons.

It is respectfully submitted that 37 CFR 1.83(a) states “Conventional features disclosed in the description and claims, where their detailed illustration is not essential for proper understanding of the invention should be illustrated in the drawing” Applicant respectfully submits that an illustration in the drawings of three blocks corresponding to a receiver, a processor and a transmitter are not essential for proper understanding of the invention, because those of ordinary skill in the art understand the written description without the benefit of the drawings.

Accordingly, applicant respectfully submits that the Examiner’s objection to drawings should be withdrawn.

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B. Rejection of Claims 14-25 under 35 USC §112, ¶ 1

The Examiner has rejected claims 14-25, under 35 USC §112, ¶ 1, as failing to comply with the enablement requirement, because “The specification does not disclose the present application comprises ‘a receiver’, ‘a processor’ and ‘a transmitter’ as cited in claims 14 and 20. Applicant respectfully disagrees.

Applicant respectfully submits that “Summary of the Invention” is considered a part of the written description. Applicant respectfully submits that the written description of the present application reads:

In another aspect, a data communication system for communication with a first modem over a telephone line is provided. The communication system includes a receiver capable of receiving an analog data signal over the telephone line from the first modem and a processor capable of applying a linear coding process to generate digitized analog data signal samples from the analog data signal. Furthermore, the communication system also includes a transmitter capable of transmitting the digitized analog data signal samples to a second modem over one or more digital signal lines of a time division multiplexed bus. (Page 5, line 21 – Page 6, line 3.)

Accordingly, the specification of the present application does recite “a receiver,” “a processor” and “a transmitter,” and applicant respectfully requests that rejection of claims 14 and 20 be withdrawn.

C. Rejection of Claims 6, 12, 18 and 24 under 35 USC §112, ¶ 2

The Examiner has rejected claims 6, 12, 18 and 24, under 35 USC §112, ¶ 2, as being unclear for use of “via two of said one or more digital signal lines.” By the present amendment, applicant has amended claim 6 to recite “wherein said one or more digital signal lines has two digital signal lines, and wherein said transmitting transmits said plurality of digitized analog data

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signal samples via said two digital signal lines.” Further, claims 12, 18 and 24 have been amended in a similar fashion. Accordingly, applicant respectfully submits that the Examiner’s rejection has been overcome.

D. Rejection of Claims 1-4, 6-9, 12-16, 18-21 and 24-25 under 35 USC §102(e)

The Examiner has rejected claims 1-4, 6-9, 12-16, 18-21 and 24-25, under 35 USC §102(e), as being anticipated by U.S. Patent Number 6,212,228 to Vlajnic (“Vlajnic”).

The Examiner states that Vlajnic anticipates “utilizing a linear coding process to generate a plurality of digitized analog data signal samples from said analog data signal” of claim 1 of the present application at col. 2, lines 55-58, figs. 1A and 2A, because Vlajnic discloses that “The received analog signals are converted to digital signals by using PCM technique at the central office 120.” (Office Action, Page 4.) Applicant respectfully disagrees.

It is respectfully submitted that it is well known that the PCM technique is a non-linear coding technique. To this end, Vlajnic provides the following:

... The process of approximating the sample with a number is known as quantization. The range of amplitudes within which a sample falls is known as the quantization interval. The difference between the actual amplitude value of the sample and the number representing the quantization interval between which the sample falls is known as quantization error. (Col. 3, lines 48-54.)

The quantization error introduced in the analog to digital conversion of a signal produces noise, which is often heard on a telephone receiver as a hissing sound in the voiceband. Reducing quantization noise is therefore desirable. By compressing the size of quantization intervals with respect to the analog signal such that quantization intervals are smaller for relatively small analog signals and larger for relatively large analog signals, quantization noise is reduced. Adjusting the quantization intervals in this manner results in compression of the quantized and coded signal. Accordingly, upon receiving a compressed PCM digital

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transmission, the decoder portion of the CODEC in a CO first expands the digital signal. Typically, a COMPRESSOR/exPANDER (COMPANDER) unit in a CODEC compresses the PCM signal and expands the corresponding compressed PCM signal. To achieve interoperability in a public switched telephone network, CODECs adhere to a standard for compressing and expanding a PCM digital signal such as the well known - law or "mu-law" compander (U.S.) or A-law compander (Europe) standards. (Col. 4, lines 4-23.)

As pointed out by Vlajnic, the non-linear coding of the PCM technique is for improving the voice quality and removing noise to closely follow human voice characteristics. However, as a result, high amplitude signals end up having more quantization distortion, because of favoring the low amplitude signals by using more bits to code smaller amplitude signals. On the other hand, claim 1 of the present application recites "utilizing a linear coding process," where all amplitudes are treated similarly, and unlike Vlajnic (or PCM technique) lower amplitudes are not favored over higher amplitudes. As a result, the invention of claim 1 improves the modem data transfer rate and provides for a bypass of the 4KHz bandwidth limitation for data transmission.

Accordingly, applicant respectfully submits that claim 1 is patentably distinguishable over Vlajnic and should be allowed. Further, independent claims 8, 14 and 20 also recite "a linear coding process" and should be allowed for the same reasons stated above. In addition, claims 2-4, 6-7, 9, 12-13, 15-16, 18-19, 21 and 24-25 depend from claims 1, 8, 14 and 20, respectively, and should be also be allowed at least for the reasons stated above.

E. Rejection of Claims 5, 11, 17 and 23 under 35 USC §103(a)

The Examiner has rejected claims 5, 11, 17 and 23, under 35 USC §103(a), as being unpatentable over Vlajnic in view of U.S. Patent Number 6,075,776 to Tanimoto ("Tanimoto").

Applicant respectfully submits that claims 5, 11, 17 and 23 depend from claims 1, 8, 14

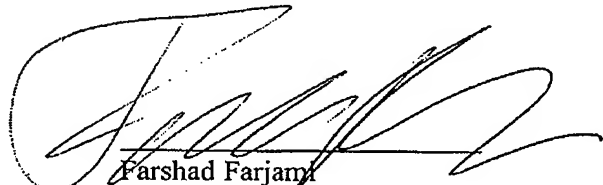
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and 20, respectively, and should be also be allowed at least for the reasons stated above.

F. Conclusion

For all the foregoing reasons, an early Notice of Allowance directed to claims 1-25 is respectfully requested.

Respectfully Submitted,
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